

THE EFFECT OF TRUST ON THE LEVEL OF EARNINGS MANAGEMENT IN EUROPEAN COMPANIES

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Reported earnings are considered to be the most important single item in financial statements reported by publicly held companies. While executives have strong incentives for manage the earnings, International Financial Accounting Standards are being constantly developed in order to make reporting comparable, as well as to control the level of management discretion.

This research studies the relationship of trust and earnings management. The objective of this thesis is to find out whether the level of trust in a society affects the level of earnings management in companies. This research uses DeFond & Park model to estimate the level of abnormal working capital accruals that indicate the level of earnings management. Regression analysis is used to find out whether either generalized trust or company trust have an effect on reported abnormal working capital accruals. The sample includes only those European listed IFRS companies operating on other than financial and insurance industry. The sample is also limited to specific European countries.

It could be expected, based on the previous researches, that the level of earnings management varies between the societies with different levels of trust. In the regression analysis, generalized trust and company trust are selected to be the hypothesis variables that determine whether the hypothesis is accepted or rejected. However, this research finds that there is no significant correlation between trust and abnormal working capital accruals. Hence, the results suggest that the level of trust does not affect earnings management of European firms.

Keywords earnings management, trust, IFRS standards

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Yritysten raportoimaa tulosta pidetään listayhtiöiden kohdalla tärkeimpänä yksittäisenä tilinpäätöslukuna. Yrityksen johdolla on usein kovat paineet muunnella tulosta. Tämän vuoksi IFRS-standardeja kehitetään jatkuvasti, jotta yhtiöiden tilinpäätöksistä saataisiin vertailukelpoisia muun muassa hallitsemalla johdon harkinnanvaraisuuden käyttöä raportoinnissa.

Tämä tutkimus keskittyy luottamuksen ja tuloksenohjauksen väliseen yhteyteen. Tutkielman tarkoituksena on selvittää, vaikuttaako yhteiskunnassa vallitseva luottamuksen taso yritysten tuloksenohjauksen tasoon. DeFond & Park –metodia käytetään mitattaessa harkinnanvaraisia jaksotuseriä, jotka kuvastavat yrityksen tuloksenohjausta. Regressioanalyysin avulla selvitetään, onko yleisellä luottamustasolla tai yrityksiin liittyvällä luottamuksella vaikutusta raportoituihin epänormaaleihin jaksotuseriin. Otos on rajattu kattamaan ainoastaan ne eurooppalaiset listayhtiöt, jotka raportoivat IFRS-tilinpäätöksen, sekä toimivat muulla kuin rahoitus- ja vakuutuslalla. Otos rajoittuu lisäksi vain tiettyihin Euroopan maihin.

Aikaisempaan kirjallisuuteen perustuen voitaisiin olettaa, että tuloksenohjauksen taso vaihtelee sellaisten yhteiskuntien välillä, joissa luottamustaso on eri. Regressioanalyysissä yleinen luottamustaso sekä yritysluottamus on valittu hypoteesimuuttujiksi, jotka määrittävät, hyväksytäänkö hypoteesi vai ei. Tutkimustulokset osoittavat, että luottamuksella ja epänormaaleilla jaksotuserillä ei ole merkitsevää yhteyttä toisiinsa. Näin ollen luottamuksella ei havaita olevan vaikutusta yritysten tuloksenohjauksen tasoon Euroopassa.

Avainsanat tuloksenohjaus, luottamus, IFRS-standardit

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1 Introduction

1.1 Background and motivation

Earnings management researches have been motivated, among other aspects, by famous financial scandals in the early 2000s. Parmalat, an Italian multinational dairy and food corporation, is an example of European financial fraud scandal. The company had convincingly entered the financial market at the end of the 90s, but by the year 2001 it already faced some financial problems. The plan for a €300 million fundraising effort was dropped and the company was not able to repay its debts. (Wikipedia/Parmalat)

During the year 2003, Parmalat's three chief financial officers as well as the chief executive officer were resigned one by one. Finally, the Bank of America released a document showing almost €4 billion in Parmalat's bank account as a forgery. A fraud investigation was followed, hundreds of thousands of investors lost their money and total of 6 executives were arrested. Auditors found that the company had covered-up debts amounted eight times the sum originally stated in balance sheets. (Wikipedia/Parmalat)

Accounting standards present some limitations regarding accounting policy and accounting estimate choices the company can apply in bookkeeping. However, there is still space for management discretion when determining the financial statement numbers to be reported. Accounting choices may be related to inventory valuation and write-downs, depreciation and amortization of long-term assets, and allowance for doubtful account. (Degeorge et al. 1999)

Executives have strong incentives to manage earnings, as their bonuses and job may depend on the reported figures (Healy 1985 p. 106). Moreover, executives are aiming to arouse interest in new potential investors, while they are trying to keep the current investors satisfied. Stakeholders are interested in reported earnings, because they are considered even more important financial statement item than cash flows when determining the success of the company. (Degeorge et al. 1999)

Real life cases such as the financial scandals have revealed that companies do have various possibilities to manage their reported earnings. Managers have opportunities and sometimes incentives as well to delay recording of the expense or making a large investment. However, Healy and Wahlen (1998) state that even though it is generally known that earnings management do exist, it is difficult for researchers to provide convincing evidence.

Olivera (2015) studied trust in European countries. There are differences in the level of trust in different countries, and Nordic countries are found to represent higher level trust than other European countries. Generalized trust can be seen as trust that is expressed to individuals one does not know across society. This reflects how much uncertainty and concern exists in the society between different people.

Knechel et al. (2018) studied the relationship between generalized trust and audit fees in their recent study. They found out that the effect of trust on earnings management is dependent on the society that is being examined; the positive impact of societal trust and audit fees is not as strong in countries with greater levels of investor protection. These findings are really fascinating, being one of the main motivations for this study.

Earnings Management has been a popular subject for researches during the past years. The phenomenon has aroused interest among researchers, and various studies have been made regarding the subject. Popular topics include the quality of financial information as well as the effectiveness of accounting standards. There are some studies about the effect of culture on earnings management (e.g. Nanda & Wysocki, 2013). However, there are no studies regarding the relationship between the trust in a society and the level of earnings management in European context.

Moreover, this study uses also the variable *company trust* in the tests, while previous researches have focused on the term *generalized trust*. Company trust indicates the level of trust the individuals have towards the firms in a society (World Values Survey, 2014). For these reasons, the results of this research may be valuable to the investigation of earnings management.

1.2 Objectives and research question

The objective of this research is to find out whether the level of trust in a society affects the level of earnings management in companies within that society. This study examines the generalized trust and company trust to find out whether either of these variables have an effect on abnormal working capital accruals that indicate the earnings management.

This study presents a research question: *Does the level of generalized trust or company trust in a society affect the level of earnings management in companies?*

1.3 Scope and limitations

As with every empirical study, this research is subject to a number of limitations. Firstly, only those listed companies that report IFRS financial statements are taken into account in order to keep the research comparable. Secondly, this research focuses only on companies within Europe so the results do not necessarily apply to other continents.

In this thesis, the DeFond and Park model is used to detect the level of discretionary accruals. This research does not take a stand on the question whether a different model could have brought out a different result. Due to the subject's definition regarding IFRS-adopters as well as the locational and industrial criteria, the sample size includes 3,680 companies. However, it can be considered to be reasonably representative sample of the population.

Like any other research, this thesis required subjective estimation regarding the formation of the sample according to the World Values Survey's (2014) research, and the selection of the sample among variety of companies and industries. Also control variables in regression analysis are determined based on previous researches and author's discretion. Different sample and variable choices could have affected the final results of this study.

1.4 Structure of research

In the next chapter, the previous literature will be introduced and interesting aspects of earnings management are discussed. The term *earnings management* is explained, and the motivation as well as different ways to manage earnings are discussed. The chapter 2 will familiarize the reader with the specifics of earnings management and the effects of culture and trust on the issue. The chapter also introduces some models for measuring the level of earnings management. Hypothesis is developed in the end of chapter 2.

Chapter 3 describes the methodology of this study. The chapter starts with disclosing how hypothesis will be tested, after which the data collection process is explained. Regression model as well as the variables are discussed and justified. Chapter 3 also estimates the appropriateness of the data and method used in this study. Chapter 4 goes through the steps of the analysis process. The empirical results from the regression model are presented, and the findings are analyzed. The empirical findings of this study are compared to the ones discussed in previous literature. Findings and conclusions are discussed more detail in chapter 5, as final chapter assesses the importance of findings. Chapter 5 raises some limitations of this study as well as discussed the suggestions for the further research.

The empirical tests are conducted using logistic regression analysis. The analysis includes scaled abnormal working capital accruals, which are determined by using DeFond & Park model. Research sample of 3,680 is selected by choosing companies that fulfill the following requirements; 1) Publicly listed company, 2) Locates in specific European country, and 3) Operates in other than financial and insurance -industry. Financial statement information is collected using Thomson Reuters Eikon -platform, while generalized and company trust values are determined by World Value Survey (2014).

2 Literature review

In this chapter, the previous literature regarding earnings management is presented. Chapter 2 explains the earnings management concept and discusses the reasons as well as patterns to manage earnings. Literature review goes also through the terms *Real Earnings Management* and *Accrual-based Earnings Management*, discussing also about the acceptability of earnings management. Chapter 2 goes through the previous literature regarding the relationship of culture and earnings management. Three earnings management estimation models are introduced, and the hypothesis is developed in the end of this chapter.

2.1 Earnings management

According to Sincerre et al. (2016), earnings management can be seen as freedom of measuring company accounting results. Scott (2003, p. 368-369), instead, states that earnings management occurs when one selects accounting policies from a set of accepted accounting rules in order to get favorable results.

Healy & Wahlen (1998) determine the term earnings management as follows: “*Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported numbers.*”

2.1.1 Why are earnings manipulated?

Initially, earnings management arises from the flexibility in accruals accounting that allows managers to use discretion in order to improve decision usefulness of financial statements (Subramanyam and Wild 2009, p. 108). According to Healy and Wahlen (1998), motivations for earnings management are arising from (1) capital market expectations and valuation, (2) contracts that include terms related to accounting numbers, and (3) government regulation.

The stakeholders of publicly held firms, such as investors, analysts, senior executives and board of directors consider earnings to be single most important item in the reported financial statements. Other items including dividends, capital investments and cash flow are showed to have only a marginal correlation in Return On Equity numbers (Easton, Harris and Ohlson 1992; Kothari and Sloan 1992). Again, Dechow (1994) found that current earnings better predict the future cash flows than current cash flows do.

Investors rely on the information published by companies. To make investors more interested in the company, executives may manage earnings in order to make the company to look more desirable. It is known that managing earnings is only a short-term solution, since up warding earnings today will decrease them on the following years. However, executive's time horizon is relatively short because the value of the stock is the present value of dividends stretching to infinity. Hereby executives have an incentive to boost the current earnings at the expense of future. (Healy 1985)

Executives are monitored by directors, investors, suppliers and customers, which makes them likely to act in self-interest and have strong incentives to manage earnings (Degeorge et al. 1999). This is because the rewards given to senior executives depend on the earnings achieved on their watch (Healy 1985). Ultimately, earnings and stock price performance affect executive's probability of keeping his job (Healy 1985; Gaver, Gaver and Austin 1995). Accordingly, an executive may not accept lower earnings today even if it would result in substantially higher returns tomorrow.

Certain thresholds may be used in executive's personal compensation contracts but also in the firm's lending contracts. When earnings are close unacceptable threshold, executives have a significant incentive to manage them upward. However, earnings are not necessarily managed upwards: if executive is already likely to earn a maximum bonus due to high earnings, further earnings increases are shifted forward in order to make future thresholds easier to meet (Healy 1985 p. 106). Executives may not want to report large increases in earnings because of the risk that their performance target will be lifted up.

Regulatory motivations are related to industry regulations, investigation by anti-trust regulators or tax planning purposes. Some industries, such as banking and insurance, face

regulatory monitoring that focuses on accounting data. Therefore, banks for instance, are obliged to maintain sufficient amount of capital, which causes incentives to manage earnings upward. On the other hand, firms that are vulnerable to an anti-trust investigation may want to manage earnings to appear less profitable. This is also the case in tax planning. (Healy & Wahlen 1998)

2.1.2 Earnings management patterns

There are several strategies that can be used to manage earnings. The *Cookie jar reserve* is a method where managers try to smooth the reported numbers throughout different years by increasing or decreasing earnings. The strategy gets its name from the activity where part of earnings in the good years are reserved (into a cookie jar) and recorded into bad years in order to achieve more stable income between financial years (Thi, 2015). Moreover, *revenue recognition* may be used to manage earnings. Managers may execute this by creating fake revenue or changing time in recording with premature recognition or deferred revenue recognition. (Thi 2015)

If a company is going to report a bad result and low earnings, manager may want to record even more expenses resulting even worse outcome. This is because in the following years, earnings will be less burdened by those expenses. The strategy is called *Big bath*, and it typically happens at the last quarter reports. At that time managers have a picture of financial year's performance and are able to tell whether the company is going to reach the earnings expectation. Judgement may be used by choosing specific income-decreasing accruals in order to affect financial statement numbers such as write-offs and deferred revenue (Healy, 1985). According to Nikolai et al. (2010, pg. 513), impairment loss on long-term asset is the most common expense used in big bath strategy.

Fourth earnings management strategy takes place when a company acquires another firm to manage financial statement numbers. Acquired company's earnings may be integrated into parent company's consolidated earnings to boost income. Also the expenses, such as R&D costs of the acquired company may be used at acquisition year to reduce burden for future earnings. This technique is called *Creative acquisition accounting* (Thi 2015) or, according to McKee (2005), *Big bet on the future*. The name indicates that by acquiring another

company, the firm may affect significantly to its revenue and costs. By recognizing more costs in current year, the future years have a better expected result.

2.1.3 Real earnings management

According to Scott (2009, p. 403), real earnings management occurs when managers take actions to affect earnings in order to achieve certain objectives related to the reported numbers. Previous literature (e.g., Bange and De Bondt 1998; Rowchowdhury 2006) introduces various methods to manage earnings through deviations from normal business activities. According to Xu et al. (2007), these methods are categorized as deviations from operating and investing activities, and deviations from financing activities.

Deviation related to operating and investing activities in this context could include, for instance, affecting the level of discretionary expenditures, such as research and development expenditures (R&D). According to IFRS standards, research and advertising costs, and usually also development costs are expensed in the period in which they occur (IASB 1998, IAS no. 38). Consequently, these costs affect the income of that financial year, which means that postponing of investments or projects can increase earnings. Moreover, larger production and price reductions are examples of operating activities, which may boost sales. If a firm sells its fixed assets with a gain, it increases earnings as well. Therefore, firms have several ways to manage earnings by using their operating and investing activities. (Rowchowdhury 2006)

According to Bruns and Merchant (1996), direct management can be done through delaying maintenance expenditures or training. Firm may also boost sales or cut prices in order to increase income. Direct management of earnings has real consequences and it may cause costs in a long-term period.

Companies could affect their earnings with financing activities using stock options or acquiring financial instruments. Granting stock options decreases earnings per share (EPS) as the number of shares grows. On the other hand, repurchasing of stocks increases EPS

(Hribar et al. 2006; Bens et al. 2003). When acquiring financial instruments, firms hedge themselves from earnings decreases (Hand 1989).

Despite the fact that real activities are an interesting subject, this thesis focuses on accrual-based earnings management and the measurement of discretionary accruals. Next chapter describes how accruals can be used in managing earnings.

2.1.4 Accrual-based earnings management

Experts state that accrual-based accounting is able to provide a better understanding of a company's financial performance than cash-basis accounting. Accruals are used in order to present expenses and revenues in the period when they actually incur. Hence, the objective of accruals is to show the true performance of the company.

In addition to this, accruals can be used to manage earnings. Accrual-based earnings management occurs at the time of financial statement preparation, when accounting principle choices and manager discretion are typically involved (Kothari et al. 2012). Managers may manipulate reported income when they are recording accruals for events, because these events usually require discretion in accounting standards. Events that include discretion include for example losses from bad debts and asset impairments. (Healy and Wahlen 1998)

According to Bruns and Merchant (1996, p. 25), firms may have flexibility in the choice of allowance for bad debt, inventory methods, expensing research and development, capitalization of leases, estimation for pension liabilities and so on. These are examples of events where manager discretion is required. However, accounting standards may limit the options used when recording these events. As executives have both the incentive and the ability to manage earnings, IFRS standards are considered to diminish accrual-based earnings management in companies.

2.1.5 REM vs. AEM

Real earnings management (REM) and accrual-based earnings management (AEM) are both ways to manage earnings. According to Zang (2012), firms prefer one earnings management strategy compared to other depending on the costs of these strategies. The costs of applying REM are affected by the economic consequences that result from deviating from optimal business activities. Restrictions related to AEM, instead, are related to auditors' scrutiny and firm's accounting flexibility (Becker et al. 1998).

According to Zang (2012), real earnings management requires companies to use their real activities to change the financial numbers. This is why REM costs more to firms, and it could negatively affect firm value in the long run. However, managers tend to engage in REM when firm is facing more investor protection, since the manipulation of accruals is not possible.

Joosten (2012) concludes that companies facing more industry competition and / or financial distress are likely to use accrual-based management to meet the thresholds. Interesting finding of his study is also that European listed firms reporting 0-10% earnings growth are likely to engage in real activities to manage earnings downwards. This is also the case in the situations where company's tax rate is high. Joosten (2012) also finds that as accrual-based earnings management is being used at the end of financial year to meet the thresholds, European listed firms may be using REM and AEM as substitutes.

Unlike real activities, accrual-based earnings management does not have cash-flow consequences in firm's earnings. According to Kothari et al. (2012), real earnings management is more difficult to detect than accrual-based earnings management, since real activities require managers' decision-making regarding operating and investing strategies, which affects cash flows. Therefore, this study concentrates on detecting accrual-based earnings management using models found by previous researches.

2.1.6 Acceptable management or misleading reporting?

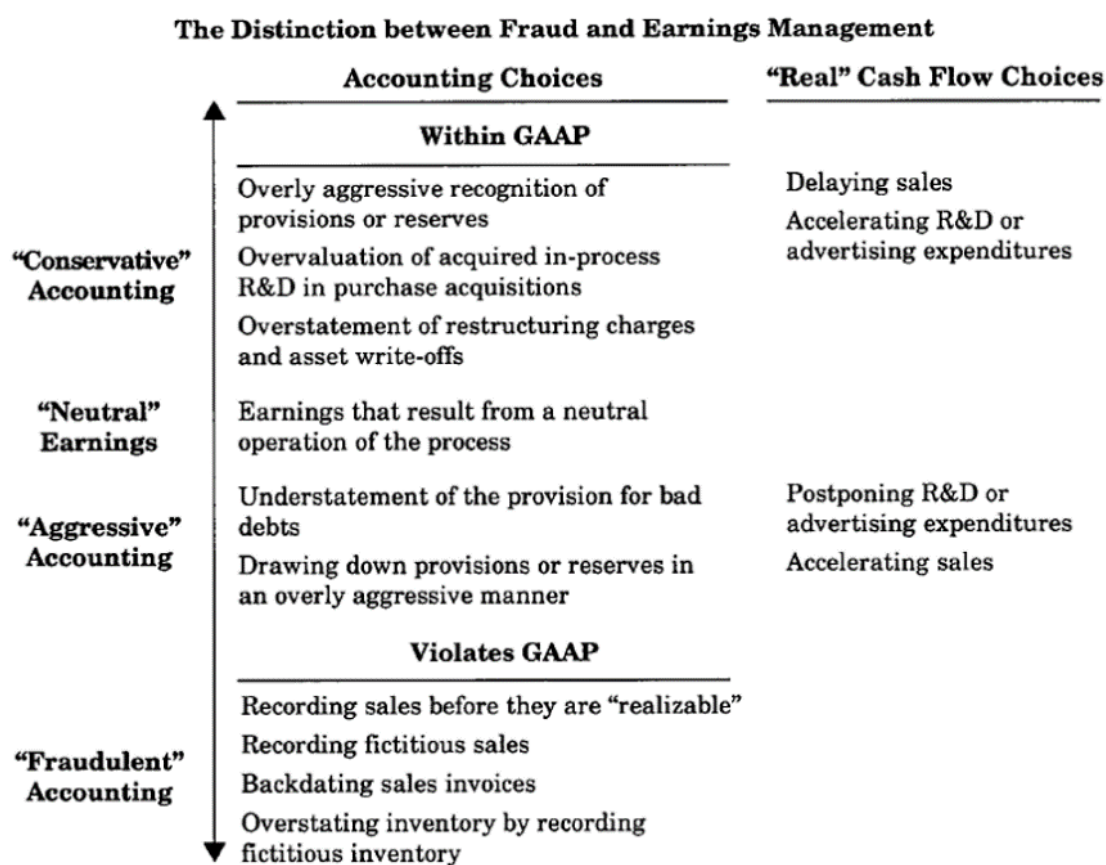
Earnings management may be used to give a better view of company's performance, or to manipulate earnings in order to show favorable results in financial statements. When this is the case, one could raise a question: Is earnings management good or bad? According to

Healy's and Wahlen's (1998) definition presented above, earnings management is seen as a sign of illegal earnings manipulation.

Whether the earnings management is done in an acceptable or non-acceptable manner, it has consequences. According to Cupertino (2013), shareholders may value the company wrong, if they cannot notice the effect of earnings management in financial statements. Direct management actually shifts income over time. Misreporting, instead, relocates an amount from one year to another. One example of misreporting could be a failure to mark down obsolescent inventory. Misreporting must pass through accountants, so it may require misleading activities as well as weak internal controls. (Degeorge et al. 1999)

Dechow and Skinner (2000) introduce a distinction that is presented in Figure 1 below. It divides earnings management based on how it is being conducted. Accounting choices and real cash flow choices are separated from each other. Accounting choices are further divided into "acceptable" (within GAAP) and "non-acceptable" (violates GAAP) means.

Figure 1 – The Distinction between Fraud and Earnings Management



According to Dechow and Skinner (2000), overly aggressive recognition of provisions is seen as conservative accounting. Conservative accounting emphasizes costs and provisions, while sales and other income are being recognized more prudently. On the other hand, aggressive accounting may lead to underestimation of provisions.

However, it can be questioned whether this allocation is still valid: auditors may consider the understatement of provisions for bad debts as fraud or an error in financial statements rather than acceptable earnings management. This is because IFRS-standards require financial assets to be recognized in the amount of expected credit loss, and this loss should be recorded as soon as the matter is known. (IFRS 9)

Healy & Wahlen (1998) discussed the difference between acceptable and non-acceptable earnings management. It is challenging if not impossible to find out, when the judgement in financial reporting is used to improve communication, and when it is used for other purposes.

It is also debated whether stakeholders can see through earnings management, or are they failing to detect it.

2.2 The effect of culture and trust on earnings management

2.2.1 Does culture affect earnings management?

The culture plays an important role in a society because it shapes economic institutions and financial markets (Beck et al. 2003; Stulz and Williamson 2003; Licht et al. 2005; Guiso et al 2006; Guiso et al 2009). There are several researches that have examined the relation between earnings management and Hofstede's (1980, 1991) cultural variables. The results of these studies (see, for example, Guan et al. 2006 and Desender et al. 2007) are mixed. One problem is that the metrics of Hofstede (1980) were developed as early as in the 1970s, which has been criticized. Tang and Koveos (2008) however, created updated values of the Hofstede's (1980, 1991) cultural variables.

Callen et al. (2010) examined the effect of culture and religion on earnings management. They argued that if earnings management is primarily done for executives' own benefit, then religious beliefs should be expected to reflect managers' incentives to manage earnings. Religion plays an important role in society's culture, and usually religions consider manipulation to be undesirable.

Overall, they found that religiosity and earnings management are unrelated. Nonetheless, the cultural metrics of individualism and uncertainty avoidance seemed to affect earnings management. Individualism is significantly negatively related to earnings management. Uncertainty avoidance and earnings management, on the other hand, are positively related. (Callen et al. 2010)

Stack and Kposowa (2006) investigated the relation between religiosity and tax fraud acceptance. Their results show that religiosity and tax fraud acceptability are negatively related. Richardson (2008) found that uncertainty avoidance and tax evasion are positively related, while religion and individualism are negatively related with tax evasion.

Guan et al (2006) discovered that there is a positive relation between earnings management and both individualism and long-term orientation. Countries with uncertainty avoidance instead, are less likely to manage earnings. Han et al (2010) found similar results in their study. Desender et al (2007) however, found somewhat different results. They found that individualism and earnings management are negatively related.

2.2.2 Societal trust

Societal trust can be seen as people's tendency to trust other people (Williamson 1993). Generalized trust means trust in people with whom the individual does not have a direct contact. World Value Survey (WVS) has measured the generalized trust in different countries. Trust scores calculated by World Value Survey reflect the possibility that a dropped wallet will be returned to its owner, and more general, that people will do the right thing. It has been noticed that societal trust scores do not vary significantly between years within a country. (Bjørnskov 2007)

With high trust levels, it is more likely to develop effective financial markets. This is because trust enables efficient transmission of information as well as smaller transaction costs, which leads to trade exchange (Knack and Keefer 1997). According to Kim et al. (2012), IFRS adoption likely increases the credibility of financial reporting. Therefore, IFRS standards could affect also the role of trust in equity markets. On the other hand, Ball et al. (2015) state that IFRS adoption may result in inefficiency in debt markets.

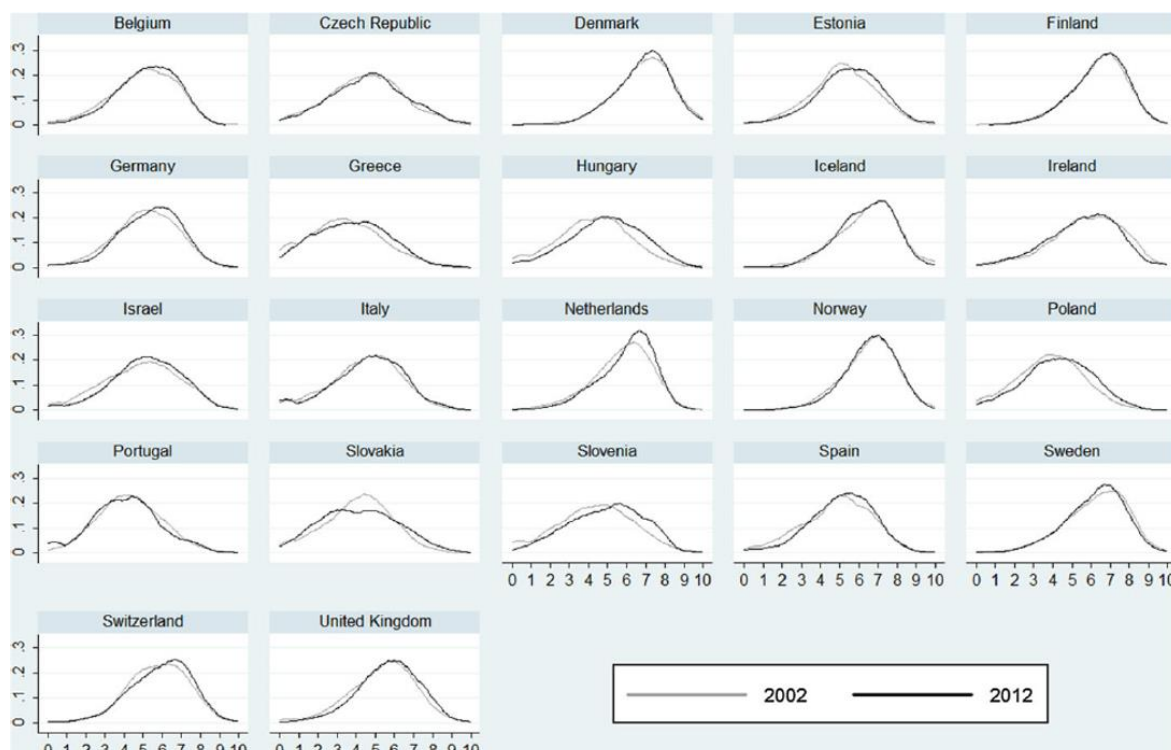
Nanda and Wysocki (2013) studied the relationship of societal trust and financial reporting. They find that firms in high trust countries are less likely to use earnings management. These companies also easier recognize unfavorable events in financial statements, and they place greater value on management disclosures. Lee et al. (2013) get similar results documenting that in high societal trust countries, corporate tax avoidance is lower than in countries with low trust. Further, Pevzner et al. (2015) detected that in higher trust countries, the investor reaction to companies' announcements was stronger.

Knechel et al (2018) studied the relationship between cultural attributes such as societal trust and audit fees in different countries. They find that the impact of societal trust on audit fees depends on the level of investor protection. In contrast to other recent studies (e.g., Jha and Chen, 2015), Knechel et al (2018) document positive relation between local trust and audit fees.

Olivera (2015) studied trust in European societies during the period 2002-2012. He found that Nordic countries represent higher level trust than other European countries and the US. In general, individuals in developing countries are less trusting than people in developed countries. According to Olivera (2015), generalized trust can be seen as trust that is expressed to individuals one does not know across society. This reflects how much uncertainty and concern exists in the society about different people. Particularized trust is expressed to individuals that belong to the same close group. This group may consist of family or friends, for example. Individuals may have significant trust on their close group, while only little generalized trust is expressed to other citizens.

Olivera (2015) shows the regression for the distribution of generalized trust in 22 European countries (see the figure 2 below). The regressions compare the trust in years 2002 and 2012, which describe the years before and after the financial crisis. For some countries, the initial year is 2004 and the latter year is 2010. It is interesting to see that in certain countries such as Slovakia, the trust distribution is different in the years 2004 and 2012, whereas in Finland the distribution has remained similar. A wider distribution figure indicates that the opinions about trust vary within a society. In the case of Slovakia, the peak of the pattern was sharper in year 2004 than in year 2012. This could mean that the opinions about trust were more consistent before the financial crisis.

Figure 2 – Distribution of trust by country in extreme years



Note: In the case of Estonia, Iceland and Slovakia, the initial year is 2004; and in the case of Greece and Israel, the final year is 2010.

Olivera (2015) found that individuals who are male, younger, more educated, single, richer or more religious, are more trustful. On the other hand, an individual that belongs to a minority ethnic group in a country is likely to be less trustful. Olivera (2015) also found that being a victim of a crime is negatively associated to trust. Most importantly, Olivera's (2015) results showed that income inequality and the level of trust are negatively related. It indicates that in countries with lower levels of trust, the income inequality is more common.

2.3 Measuring earnings management

Managers are able to use reporting discretion to manage the economic performance of the firm. They may have incentives to overstate earnings in order to reach a target (Leuz, Nanda and Wysocki, 2003). The level of discretionary accruals measures the extent to which managers use judgement in reporting earnings. Previous researches introduce various

models for estimating discretionary accruals. The most popular one is considered to be Jones (1991) model. It estimates the effect of changes in a company's economic circumstances on non-discretionary accruals. (Dechow et al. 1995)

Second method for estimating discretionary accruals was introduced by Dechow and Dichev (2002), and it uses cash flow to estimate working capital accruals. Third accounting model presented in this study is DeFond & Park (2001) model. It estimates unusual accruals as changes in sales and working capital.

Companies' accruals have been examined already on 1980's, and since the understanding towards different methods has become more common. Different models that estimate the discretionary accruals (such as Jones 1991, Dechow 1995, Dechow & Dichev 2002, Defond & Park 2001) have successfully been able to discover different kinds of earnings management. (Rove, 2017)

However, estimation of discretionary accruals is subject to some limitations. Methods are unable to show which discretionary accruals are related to earnings management and which are necessary in order to give a true and fair view of firm's performance. Ball (2013) criticized the fact that discretionary accruals are used too widely in earnings management literature. According to Ball (2013), literature gives the impression that earnings management is more common than it actually is, and that managing earnings is always unacceptable.

Next, three models detecting earnings management are represented.

2.3.1 Jones model

Jones (1991) model investigates how changes in company's economic circumstances affect the non-discretionary accruals. In this model, the non-discretionary accruals consist of total assets, gross property plant and equipment (PPE) and gross revenue. The revenue represents economic events that cause current non-discretionary accruals, and gross PPE controls depreciation expense –related non-discretionary accruals (Beslic et al. 2015). That part of

total accruals which cannot be explained with the changes in sales and PPE, belongs to discretionary accruals.

There are two assumptions where Jones (1991) model is based on. Firstly, sales are expected to be unmanaged. Secondly, changes in current assets and liabilities are due to fluctuations in sales revenue. Hence, this model does not assume that non-discretionary accruals are constant. One specific feature of Jones (1991) model also is that it attempts to measure the effect of changes in operating performance on the non-discretionary accruals. (Beslic et al. 2015)

Jones (1991) divides total accruals into their discretionary (managed) and non-discretionary components. First, total accruals (TA) are estimated using balance sheet approach. Next, the model is used in order to calculate the non-discretionary accruals (NDA). Finally, discretionary accruals (DA) are estimated using equation $DA_{it} = TA_{it} - NDA_{it}$.

In the Jones (1991) model all variables are scaled with average total assets in the beginning of the year ($A_{(t-1+t)/2}$) to reduce heteroscedasticity. The Jones model is the equation:

$$\frac{TA_{it}}{A_{(t-1+t)/2}} = \beta_0 * \frac{1}{\frac{A_{t-1+t}}{2}} + \beta_1 * \left(\frac{\Delta REV_{it}}{\frac{A_{t-1+t}}{2}} \right) + \beta_2 * \left(\frac{PPE_{it}}{\frac{A_{t-1+t}}{2}} \right) + \varepsilon_{it}; \quad (1)$$

Where:

TA_{it} = total accruals for the company i in the current period t ;

$A_{(t-1+t)/2}$ = average total assets;

$\beta_0, \beta_1, \beta_2$ = estimated parameters or regression coefficients;

ε_{it} = residual variable or earnings management (EM);

ΔREV_{it} = change in net sales revenues of the company i in the current year t compared with previous year $t-1$;

PPE_{it} = gross value property, plant and equipment for the company i in the current year t .

There are various ways to determine total accruals. The two most used methods among the researchers are the balance sheet approach (see Healy, 1985 and Jones, 1991) and the cash flow approach (Chen et al. 2005; Naveed et al. 2012; Fawzi, 2014). The cash flow approach

uses cash flow statement to define the accruals. In this approach, total accruals may be calculated as follows: TA_{it} (total accruals) = NI_{it} (net income) – CFO_{it} (net operating cash flow) (Hribar & Collins, 2002).

In the balance sheet approach, the accruals are calculated as the changes in balance sheet accounts. Total accruals (TA) are calculated using the equation:

$$TA_t = \Delta CA_t - \Delta CL_t - \Delta Cash_t + \Delta STD_t - DEP_t; \quad (2)$$

Where:

ΔCA_t = Change in current assets between current year t and previous year $t-1$;

ΔCL_t = Change in current liabilities between current year t and previous year $t-1$;

$\Delta Cash_t$ = Change in cash and cash equivalents between current year t and previous year $t-1$;

ΔSTD_t = Change in current maturities of long-term debt and other short term debt included in current liabilities between current year t and previous year $t-1$;

DEP_t = Depreciation and amortization in the current year t .

Models that attempt to detect the manipulation of earnings, measure the amount of discretionary accruals for the financial year. If the value significantly differs from zero, there has been manipulation of the financial results in the period. Plus-sign in discretionary accruals means that the financials are managed to increase earnings, while minus-sign shows that manipulation has been done to decrease the financial result. As in every estimation model, there are some limitations regarding Jones model; it does not reveal the potential manipulation of earnings (Beslic et al. 2015)

2.3.2 Dechow & Dichev model

Dechow and Dichev (2002) present earnings management model that is not dependent on Jones (1991) model. The earlier is based on the assumption that accruals recorded in the previous or following financial period should affect those cash flows. If not, the accruals

have not been based on the real cash flow, which means that the quality of working capital accruals is compromised. (Dechow and Dichev, 2002)

Similar to Jones (1991) model, Dechow and Dichev (2002) model is estimated separately to each company. However, no industry distribution, such like in Jones (1991) model, is being used. The residual variable is comparable between different companies, but it only tells about the deviation regarding accruals of a single company.

$$\Delta WC_t = \alpha + \beta_1 * \frac{CFO_{t-1}}{ta_{avg}} + \beta_2 * \frac{CFO_t}{ta_{avg}} + \beta_3 * \frac{CFO_{t+1}}{ta_{avg}} + \varepsilon; \quad (3)$$

Where:

ΔWC_t = Scaled working capital accruals;

CFO_{t-1} = Operating cash flow in previous period;

CFO_t = Operating cash flow in current period;

CFO_{t+1} = Operating cash flow in the following period;

ta_{avg} = Average total assets during the period;

ε = Deviation from estimated working capital accruals.

Dechow and Dichev (2002) present the following formula for calculating the working capital accruals (ΔWC_t):

$$\Delta WC_t = \frac{(\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it})}{ta_{it-1}}; \quad (4)$$

Where variables are the same as in the formulas (2) and (3).

2.3.3 Defond & Park model

Defond and Park (2001) represent a model that is used to estimate abnormal working capital accruals. Where this model differs from the previous models is that Defond & Park model explains discretionary accruals with the annual changes in sales and working capital. The

data needed for the model is easily accessible, and no industry allocation is required when applying DeFond & Park model. (Rove 2017)

Theoretically, DeFond & Park model assumes that the relation of working capital and sales remains the same: $WC_t/REV_t = WC_{t-1}/REV_{t-1}$.

If $WC_t = (WC_{t-1}/REV_{t-1}) * REV_t$, the change in accruals is normal, not discretionary, according to DeFond and Park (2001). However, this is not normally the case, and with formatting the formula, the final function that estimates the level of earnings management is as follows:

$$AWCA_{it} = \frac{WC_{it} - \left[\left(\frac{WC_{it-1}}{REV_{it-1}} \right) * REV_{it} \right]}{ta_{it-1}} \quad (5)$$

Where:

$AWCA_{it}$ = Scaled abnormal accruals;

WC_{it} = Working capital excluding cash in current period;

WC_{it-1} = Working capital excluding cash in previous period;

REV_{it} = Revenue in current period;

REV_{it-1} = Revenue in previous period;

ta_{it-1} = Total assets in previous period.

Positive abnormal accruals mean that accruals are used to increase earnings, while negative results indicate that accruals are used to decrease earnings. The absolute value of the result tells about the intensity of earnings management. (DeFond and Park, 2001)

Compared to Jones model, DeFond & Park model may give less exact results since there are no regression analysis or industry terms to soften the normal variation of accruals. DeFond & Park model is most effective in such researches that examine the level and direction of earnings management but the exact value of earnings management would be less significant. This model is chosen to be used in this study because the data needed is easily accessible. The sample does not have to be divided according to industries, which allows a large sample size. Moreover, Rove (2017) document that in his research about different earnings

management estimation models, DeFond & Park model is the best model to estimate the level of earnings management in Finnish context. Therefore, it could work well in European context.

2.4 Hypothesis development

Olivera's (2015) study is only one of few researches regarding social trust in European context. Furthermore, as previous researches about culture and earnings management have showed mixed results, it is challenging to develop a framework that could predict the effects of specific cultural variables (trust) on earnings management in this study. Hypothesis of this study is developed below.

Nanda and Wysocki (2013) studied the relationship of societal trust and financial reporting. They find a negative relationship between earnings management and societal trust. That is, the more there is trust in a society, the less companies use earnings management. In addition, Lee (2013) finds that in high societal trust countries, corporate tax avoidance is lower than in countries with lower societal trust. This result is comparable with earnings management researches, because tax avoidance can be seen as part of earnings management. For example, Frank et al. (2009) document a strong and positive relation between aggressive tax and financial reporting. Also Chen et al. (2012) find tax planning and earnings quality to be connected. Consequently, these researches document a negative relationship between societal trust and the level of earnings management.

Martinez and Moraes (2016) study the relationship between auditors' fees and earnings management in Brazilian market. They find a positive relationship between abnormal audit fees and discretionary accruals, that is, estimated level of earnings management. Knechel et al. (2018) also document results related to audit fees. In their study about generalized trust and audit fees, they find positive relation between local trust and audit fees. This indicates that in countries with high levels of trust, also the audit fees should be larger. According to these two studies, audit fees rise hand in hand with trust as well as earnings management. Hence, trust and earnings management should have a positive correlation as well.

As discussed above, previous researches document mixed results regarding the relationship of trust and earnings management. The hypothesis of this study is based on the results of these previous studies. Nanda's and Wysocki's (2013) research clearly supports the relation of trust and earnings management. However, in this research is it irrelevant whether the correlation is positive or negative. Hypothesis assumes that the trust is related with earnings management. More specifically, generalized trust and company trust are related with the earnings management.

H1: Generalized trust and company trust are related with a firm's earnings management.

3 Methodology

This chapter describes the methodology of the research. Chapter 3 discusses the data sources as well as the reliability and validity of the data and research method. The sample composition is presented more detail, after which the regression equation and variables are introduced.

3.1 Hypothesis testing

Based on the hypothesis development in previous chapter, hypothesis is defined as “Generalized trust and company trust are related with a firm’s earnings management “. This research tests hypothesis by studying whether the generalized trust or company trust values affect the level of abnormal working capital accruals. The results are expected to show that generalized and company trust variables are statistically significant in predicting the amount of abnormal working capital accruals in European context.

3.2 Data collection process

This research uses two data sources: Country-specific trust levels are determined in World Values Survey (2014), while financial statement data is retrieved using Thomson Reuters Eikon -platform. In World Values Survey (2014), each country has individual general trust and company trust indexes. In chapter 2, the terms *trust* and *societal trust* are used to describe *general trust* in a society. Generalized trust measures to what extent people can be trusted in a certain society (Olivera, 2015). The term *company trust* means the level of confidence people have in companies (World Values Survey, 2014). Table 1 below represents the generalized trust and company trust values found by WVS.

Table 1 - Country-specific trust values (World Values Survey, 2014)

Country	Generalized trust	Company trust
Denmark	0,76	0,78
Norway	0,75	0,7
Sweden	0,67	0,67
Netherlands	0,63	0,64
Finland	0,62	0,61
Germany	0,41	0,53
Ireland	0,38	0,6
Austria	0,37	0,58
Belgium	0,35	0,57
U.K.	0,35	0,57
Italy	0,3	0,5
France	0,24	0,57
Spain	0,23	0,48
Greece	0,21	0,35
Portugal	0,17	0,44

The data collection process starts with the country-specific trust values determined by World Values Survey (2014). This research examines only IFRS-adopter companies in order to keep the data comparable. Hence, only European companies from WVS's list are included into sample. The countries listed by VWS (2014) do not, however, cover all European countries, as the table 1 shows. Eikon –platform is the second data source for financial statement data. In Eikon searches, the requirements include (1) publicly listed companies, (2) companies with other than financial and insurance activities, and (3) companies whose headquarters are located in European countries specified in table 1.

In the data analysis, the current period values cover the last 12 months (FY0) while previous period covers the earlier 12 months (FY-1). This is because all European companies do not have calendar year as their financial year. This research analyses data only during twelve months in order to remove the effect of changes in IFRS standards during the years. In addition to the information in balance sheet and the statement of profit and loss, also industry, country code and company ID information were retrieved from Eikon. The total sample includes 3,680 European companies. The table 2 below summarizes the composition of the sample.

Table 2 - Composition of the sample

Country	No. of firms
Denmark	107
Finland	131
Norway	132
Sweden	627
Austria	50
Belgium	94
France	504
Germany	428
Great Britain	907
Ireland	52
Netherlands	119
Greece	121
Italy	213
Portugal	37
Spain	158
Total	3,680

The sample consists of all European publicly listed companies that meet the locational criteria in Eikon platform. All companies with financial services industries were removed from the sample to ensure that the different balance sheet structure will not distort the results of the analysis. Hence, the sample contains 3,680 companies. Sample includes companies operating together in 18 industries. The table 3 below shows the industry distribution of the sample. Industry “K” is the one referring to financial services, and therefore it is missing from the table.

Table 3 - Industry distribution of the sample

Industry variable	Description	No. of firms	% of sample
industry_a	Agriculture, forestry and fishing	32	1 %
industry_b	Mining and quarrying	141	4 %
industry_c	Manufacturing	1455	40 %
industry_d	Electricity, gas, steam and air conditioning supply	81	2 %
industry_e	Water supply; sewerage, waste management and remediation activities	25	1 %

industry_f	Construction	105	3 %
industry_g	Wholesale and retail trade; repair of motor vehicles and motorcycles	297	8 %
industry_h	Transportation and storage	114	3 %
industry_i	Accommodation and food service activities	64	2 %
industry_j	Information and communication	515	14 %
industry_l	Real estate activities	220	6 %
industry_m	Professional, scientific and technical activities	246	7 %
industry_n	Administrative and support service activities	126	3 %
industry_o	Public administration and defence; compulsory social security	8	0 %
industry_p	Education	11	0 %
industry_q	Human health and social work activities	71	2 %
industry_r	Arts, entertainment and recreation	69	2 %
industry_s	Other service activities	100	3 %
Total		3,680	100 %

3.3 Regression model

This study uses regression analysis to measure the effect of each variable on abnormal working capital accruals. The regression equation is presented below.

$$abs_AWCA = \alpha + \beta_1 * trust_people + \beta_2 * trust_company + \beta_3 * \ln_revenue + \beta_4 * LEV + \beta_5 * scaled_CFO + \beta_6 * \ln_fee + \beta_7 * IND \quad (6)$$

where:

abs_AWCA = absolute value of abnormal working capital accruals in current year;

trust_people = country-specific variable for generalized trust;

trust_company = country-specific variable for company trust;

ln_revenue = the natural logarithm of the firm revenue in current year;

LEV = liabilities and debt divided by total assets in current year;

scaled_CFO = cash flow from operations in current year scaled with total assets in previous year;

ln_fee = the natural logarithm of the auditor's fee in current year;

IND = industry variables (total 18) receiving a binary variable that is assigned a value of 0 or 1.

3.4 Variable selection

The table 4 separates and describes the outcome variable, hypothesis variables and control variables. All the variables are justified below the table.

Table 4 – Variables

Outcome variable	Description
Earnings management	Absolute value of abnormal working capital accruals
Hypothesis variables	
Generalized trust	Country-specific variable determined by WVS (2014)
Company trust	Country-specific variable determined by WVS (2014)
Control variables	
Size	Natural logarithm of the firm's revenue
Leverage	The ratio between total liabilities and total assets
Cash flow from operations	Cash flow from operations scaled by total assets
Auditor's fee	Natural logarithm of auditor's fee
Industry dummy	A binary variable that is assigned a value of 0 or 1.

AWCA

As discussed in the end of chapter 2, the DeFond and Park model is used to calculate abnormal working capital accruals for each company. Also the motivation for using this specific model is discussed in chapter 2. The larger the AWCA value is, the more company

manages its earnings. Positive value indicates that company aims to increase its current period earnings with accruals, while negative AWCA means that accruals are used to make current period earnings seem lower than what they actually are. However, in this research the direction of the earnings management is not relevant as only the existence of the relationship between AWCA and trust variables is being examined. Hence, only the absolute value of AWCA is being examined.

$$AWCA_{it} = \frac{WC_{it} - \left[\left(\frac{WC_{it-1}}{REV_{it-1}} \right) * REV_{it} \right]}{ta_{it-1}}$$

In order to use this model, the following information was retrieved using Eikon platform:

WC_{it} = Working capital excluding cash in current period;

WC_{it-1} = Working capital excluding cash in previous period;

REV_{it} = Revenue in current period;

REV_{it-1} = Revenue in previous period;

ta_{it-1} = Total assets in previous period.

Working capital excluding cash is calculated as follows:

Net working capital = current assets – cash & equivalents – accounts payables

Generalized trust and company trust

Trust variables serve as hypothesis variables in the analysis, since they give answers to the research question. As discussed in the beginning of this chapter, generalized trust indicates to what extent people trust each other in a society. Company trust describes the level of confidence people have in companies in their society. These variables are country-specific, and are determined by World Values Survey (2014).

Control variables

In previous researches (see Rathke et al. 2016), size significantly associated with the level of discretionary accruals, which is why natural logarithm of revenue was selected to be a control variable. CFO and leverage (scaled_CFO and LEV) are added in regression, since low cash flow or high leverage of a firm could be a motive for earnings management.

Auditor's fee has found to be positively correlated with earnings management in previous researches (see e.g. Kenchel et al. 2018), which is why it is included in control variables. Finally, industry was selected as variable to control the earnings management in different industries.

3.5 Reliability and validity of data and method

Reliability of the research data is considered to be sufficient, since only reliable data sources are used. World Values Survey is a global network of social scientists, led by an international team of scholars, with the WVS Association WVSA Secretariat headquartered in Vienna, Austria. General trust values are used in previous earnings management researches as well, which makes this study comparable. Eikon is an international, widely used financial information service with an access to global, daily updated information, and the information retrieved using that platform is considered to be reliable.

This research uses appropriate and widely used method in measuring earnings management. DeFond and Park model (2001) measures effectively the level and direction of earnings management, while the exact value of earnings management is less significant in this research. This is because only the existence of the relationship between trust variables and earnings management is studied. DeFond and Park (2001) method allows larger sample size, because it uses data that is easily accessible in general databases. Rove (2017) found DeFond & Park model to be the most effective one to measure earnings management in Finnish context. As data for DeFond and Park model is easily accessible and the model measures what it is supposed to, one can argue that the selected research method for this study is valid.

4 Results

This chapter presents the results of this research. The descriptive statistics as well as empirical results from the regression model are introduced. Chapter 4 also discusses whether the results support the literature review findings, and whether the results were expected or unexpected.

4.1 Descriptive statistics

Table 5 below presents descriptive statistics of the sample divided into three groups. A total of 1,757 companies received values for each variable. The statistics are grouped based on the company location. Nordic countries include Denmark, Norway, Sweden and Finland. Central Europe group consists of Netherlands, Germany, Ireland, Austria, Belgium, United Kingdom and France. Southern Europe covers the rest of the countries; Italy, Spain, Greece and Portugal. The descriptive statistics of the sample without the breakdown is presented in table 6.

As the table 5 shows, the median of abnormal working capital accruals somewhat varies between Nordic countries, Central Europe and Southern Europe. The median of AWCA in Southern Europe is 20% smaller than it is in Nordic countries, however, the differences in medians are not significant. This difference could indicate that in Southern Europe, less abnormal working capital accruals are used to manage earnings. However, the sample contains clearly more Nordic companies than Southern European companies, which could distort the results.

People trust (generalized trust) and company trust numbers are country-specific, as shown in the table 3.1 in previous chapter. Generalized and company trust levels are both higher in Nordic countries compared to Central and Southern Europe. This is in line with the findings of Olivera (2015), who document higher level trust in Nordic countries compared to other European countries.

The median of leverage also varies between companies from different parts in Europe. The table 5 shows that the mean of LEV between total liabilities and total assets for Nordic country companies is 0.499, while the ratio for Central European companies is 0.591 and Southern European firms 0.604. It is generally thought that Nordic companies rather avoid risks, while Southern European companies are more open to risk-taking (Rego and Wilson, 2012). However, the values for CFO, revenue and audit fee do not significantly vary between different areas in Europe.

Table 5 – Group-specific descriptive statistics

Variable	Nordic countries			Central Europe			Southern Europe		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
<i>abs_ABNACR</i>	0.065	0.029	0.120	0.060	0.028	0.112	0.048	0.023	0.086
<i>scaled_CFO</i>	0.058	0.078	0.255	0.047	0.074	0.220	0.071	0.072	0.089
<i>ln_revenue</i>	12.258	12.453	2.383	12.712	12.784	2.511	13.186	13.301	1.928
<i>ln_fee</i>	5.672	5.557	1.363	6.135	5.904	1.573	6.098	5.927	1.475
<i>trust_people</i>	0.692	0.670	0.049	0.362	0.350	0.086	0.266	0.300	0.042
<i>trust_company</i>	0.683	0.670	0.048	0.566	0.570	0.026	0.484	0.500	0.031
<i>LEV</i>	0.499	0.524	0.204	0.591	0.527	1.247	0.604	0.613	0.217
Observations	375			1,180			202		

The descriptive statistics without the grouping are presented in table 6 below. The statistics reveal that the natural logarithm of revenue and audit fee as well as the leverage vary the most as their standards deviations are the largest. This is natural since the base values of these variables vary strongly between the firms.

Table 6 - Descriptive Statistics of the total sample

Variable	Mean	Median	Std. Dev.	Min.	Max.
<i>abs_AWCA</i>	0.087	0.033	0.162	0.000	1.000

<i>scaled_CFO</i>	0.052	0.074	0.217	-2.822	2.403
<i>ln_revenue</i>	11.304	11.446	2.993	-2.287	19.355
<i>ln_fee</i>	6.032	5.841	1.530	-1.022	12.139
<i>trust_people</i>	0.427	0.350	0.176	0.170	0.760
<i>trust_company</i>	0.581	0.570	0.079	0.350	0.780
<i>LEV</i>	0.573	0.535	1.030	0.002	36.134
Total observations	1,757				

Table 7 shows correlations between independent variables, since the logistic regression does not explain the interactions between single variables. A star (*) indicates that the correlation is significant at one percent level.

The correlation analysis shows a strong correlation between scaled operating cash flow and natural logarithm of revenue. This indicates that companies with larger revenue have more likely bigger operating cash flow. Even more significant correlation seems to exist between revenue and audit fees. This is expected, since audit fees are usually tied to a firm's size, that is, level of revenue.

Another strong – but expected - correlation lies between people trust and company trust. These numbers change mostly together, and a society with high people trust index is more likely to have a high company trust as well. On the other hand, in societies where people cannot be trusted, companies are probably experiencing the lack of trust too.

There is an interesting and surprisingly low correlation between leverage and audit fee. One could assume that the more debt a firm has, the bigger would its audit fee be. All in all, the correlation is positive, which indicates that the more leverage the company has, the larger the audit fee is. This is in line with a thought that investors value the auditors' work especially in companies with large amounts of debt.

Table 7 – Correlations of independent variables

Variable	<i>scaled_CFO</i>	<i>ln_revenue</i>	<i>ln_fee</i>	<i>trust_people</i>	<i>trust_company</i>	<i>LEV</i>
<i>scaled_CFO</i>		0.362*	0.155*	0.030	-0.005	-0.123*
<i>ln_revenue</i>	0.362*		0.807*	-0.045	-0.068	-0.013
<i>ln_fee</i>	0.155*	0.807*		-0.071	-0.036	0.020
<i>trust_people</i>	0.030	-0.045	-0.071		0.843*	-0.028
<i>trust_company</i>	-0.005	-0.068	-0.036	0.843*		-0.043
<i>LEV</i>	-0.123*	-0.013	0.020	-0.028	-0.043	

Note: The star (*) means significance at a 1% level

4.3 Regression model results

The first column in table 8 presents the coefficient for each independent variable. Coefficient estimates show the relationship between the dependent variable and the independent variable. These values represent the change in predicted variable when the predictor would change by one unit, holding all other predictors constant. The second and third columns show z- and p-values, which are used to determine the statistical significance of the results. P-value varies between 0 and 1. The smaller the value is, the more likely can the correlation be generalized to the population. Hence, a smaller p-value indicates stronger evidence against the null hypothesis, and it is more statistically significant.

In this research, a 95% confidence level is used. Confidence level quantifies the level of confidence that the parameter lies in the interval. With a 95% confidence level, a variable is statistically significant if it gets a p-value smaller than 0.05 (5%). The greatly deviating values are removed from the data before the tests as the deviations in scatter plot are

problematic when using the correlation coefficient. Table 8 below presents the estimates of the regression model.

Table 8 - Estimates of logistic regression

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value</i>	<i>Significance</i>
<i>ln_fee</i>	0.001	0.003	0.694	
<i>ln_revenue</i>	-0.009	0.002	0.000	*
<i>trust_people</i>	0.055	0.030	0.060	
<i>trust_company</i>	-0.082	0.072	0.252	
<i>LEV</i>	0.022	0.008	0.006	*
<i>scaled_CFO</i>	-0.094	0.014	0.000	*
<i>industry_a</i>	0.028	0.028	0.313	
<i>industry_b</i>	0.016	0.014	0.243	
<i>industry_c</i>	0.004	0.006	0.484	
<i>industry_d</i>	-0.010	0.016	0.557	
<i>industry_e</i>	-0.018	0.030	0.556	
<i>industry_f</i>	-0.002	0.017	0.908	
<i>industry_g</i>	-0.002	0.010	0.822	
<i>industry_h</i>	-0.034	0.014	0.012	*
<i>industry_i</i>	-0.036	0.019	0.055	
<i>industry_j</i>	-0.001	0.008	0.876	
<i>industry_l</i>	0.196	0.037	0.000	*
<i>industry_m</i>	0.000	0.011	0.964	
<i>industry_n</i>	0.005	0.015	0.733	
<i>industry_o</i>	0.000	0.055	1.000	
<i>industry_p</i>	-0.049	0.110	0.654	
<i>industry_q</i>	-0.020	0.024	0.402	
<i>industry_r</i>	-0.001	0.020	0.946	
<i>industry_s</i>	-0.007	0.042	0.876	
Multiple R	0.293			
Adjusted R Square	8.3 %			
Observations	1,749			

Note: A star () indicates significance at 5% level*

The adjusted R Square is only 8.25%. Therefore, another test was made by removing those variables that least explained the absolute amount of abnormal working capital accruals. The variable *trust_company* is one of those variables. The results from the second test are

presented in table 9 below. In the second test, the coefficient of determination is slightly higher, 9.68%. However, the hypothesis variable *trust_people* is still not statistically significant.

Table 9 – Adjusted estimates

<i>Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>P-value</i>	<i>Significance</i>
ln_revenue	-0.007	0.001	0.000	*
trust_people	0.030	0.016	0.051	
LEV	0.023	0.008	0.004	*
scaled_CFO	-0.095	0.013	0.000	*
industry_l	0.178	0.035	0.000	*
industry_h	-0.025	0.013	0.054	
Multiple R	0.316			
Adjusted R Square	9.7 %			
Observations	1,749			

Note: A star () indicates significance at 5% level*

4.4 Analysis of the results

The regression analysis in chapter 4.3 gives partly unexpected results. The revenue, leverage and operating cash flow in table 8 are statistically significant as expected. Also the transportation and storage industry (H) as well as the real estate activities (L) seem to be statistically significant. However, audit fee is not statistically significant, even though it is shown to be associated with earnings management in previous researches. Most importantly, company trust and people trust are not statistically significant, which is unexpected.

The Adjusted R Square (the coefficient of determination) remains small for both tests, which could in first test be explained by the large number of variables that are not statistically significant. Some challenges in analysis process were also caused by companies that did not get a value for each variable, because that decreased the sample size of the research.

It is expected that CFO and leverage of a company affect the abnormal working capital accruals. Revenue and CFO are strongly correlated, since a larger firm is more likely to have a bigger operating cash flow. Further, as the firm size increases, it reports more accruals in general. Leverage is the ratio between firm's total liabilities and total assets. As said, the increased leverage indicates increased amount of debt the company has. It is not unexpected that a firm with large debts would have an incentive to report abnormal working capital accruals, that is, manage its earnings. Also previous researches (see e.g. Dechow et al., 1995) document a positive relationship between leverage and earnings management.

Audit fee is not statistically significant in the tests. This is unexpected as according to previous researches (see e.g. Knechel et al. 2018), audit fees are related to a firm's earnings management. Moreover, correlation analysis shows strong correlation between the revenue and audit fee. As revenue is statistically significant, one could expect the audit fee to affect abnormal working capital accruals too.

The transportation and storage industry (H) as well as the real estate activities (L) are statistically significant in the first test. One could ask: why these two? The previous literature does not widely cover industry-specific earnings management in Europe. However, Chen et al. (2011) studied discretionary accruals in Chinese real estate companies. They find that listed real estate companies have an incentive to manage earnings. This is in line with the statistical significance of the real estate industry variable, but only if the results can be generalized in the context of Europe. Transportation and storage –industry's significance, on the other hand, does not get any support from previous literature.

In the second test, *trust_people* variable is not far from being statistically significant at 5% level as its p-value is 0.058. Generalized trust has been used in previous earnings management literature. As discussed in chapter 2, Nanda and Wysocki (2013), for instance, found trust to be negatively associated with earnings management. In addition, previous researches (see e.g. Knechel et al. 2018) find a positive relationship between generalized trust and audit fees. This research does not show similar results, since according to the correlation analysis in table 7, people trust and audit fee are not correlated.

5 Conclusions

This chapter concludes the significance of the findings. The objectives of this research are compared to the empirical results, after which the conclusions related to the hypothesis are presented. Chapter 5 discusses the contributions of this research to the earnings management literature, and raises some limitations that are subject to this study. Finally, suggestions for further research are discussed.

5.1 Summary

The objective of this research is to found out whether the trust affects the earnings management in European context. The previous earnings management and cultural variable literature is discussed to find out relevant variables affecting the earnings management. Earnings management models are introduced, and DeFond & Park model is selected to be used in this research to calculate the abnormal working capital accruals.

The earlier studies measuring trust and earnings management are either focused on American samples, or are mixing data from Europe and other continents. However, most of the previous studies have used logistic regression analysis like this research when performing the tests. As the method and the phenomenon studied are similar, the comparison between this research and previous literature is possible.

The sample size in in this research is 3,680 companies. This includes all European listed IFRS companies, which meet the locational and industrial criteria stated in chapter 3. The financial statement data is from the last twelve months, because the financial years vary between different companies. The results from the regression analysis are presented in chapter 4. The results are found to be partly unexpected as they are not fully supported by previous literature.

Further, the empirical tests are completed in chapter 4. Tables 5, 6 and 7 present the analysis of independent variables. The hypothesis variables are people trust and company trust, and

they answer to the question: Does trust have an effect on earnings management? As discussed in chapter 2, the hypothesis assumes that trust is related to a firm's earnings management.

5.2 Conclusions of the findings

The hypothesis assumes that generalized trust and/or company trust are related to a firm's reported abnormal working capital accruals. However, as the results show, neither of the trust variables are significant in regression analysis. Therefore, the hypothesis stated in this research is rejected, and the level of trust in a society does not affect the earnings management in European companies. These results are unexpected as previous literature (Nanda and Wysocki, 2013) finds trust in a society to correlate with the quality of reporting, and further earnings management.

This research is completed on the basis of previous researches that were made in different context. There are great differences in accounting standards between IFRS and US GAAP for example, which may or may not have affected the results of this research compared to other researches. The data source was selected according to the target countries of the sample, since not all databases provide financial information of European companies. Also, the selected DeFond & Park model may affect the results, because some previous studies use alternative methods. All in all, there are several reasons behind the received results.

IFRS-standards have probably unified the reporting of listed companies to the extent that the amount of abnormal working capital accruals is smaller. Moreover, the European countries may have become more homogeneous, and no major differences in firms' abnormal working capital accruals, or financial reporting strategies in general, exist. This fact is supported by the fact that as the table 5 in chapter 4 shows, the trust variables vary more within Europe than the abnormal working capital accruals. This further confirms the result that in Europe, the generalized trust and company trust do not have an effect on earnings management.

The first contribution to the earnings management literature is that this research examines the effect of trust only in European context, which has not been done before. The results

show that trust (people or company trust) does not have an effect on earnings management of the companies. Secondly, audit fee, which is commonly used as a variable when testing earnings management, does not apply in the context of Europe.

Results are significant in everyday life. Investors are able to rely on the fact that even the level of trust varies to the large extent between European countries, abnormal working capital accruals do not vary as much. Hence, the companies located in lower trust countries may be now considered more reliable. This could even lead to the situation where the trust in companies located in lower trust countries rises, and eventually the differences in trust levels within Europe decrease.

5.3 Limitations and suggestions for further research

The findings of this research represent only the companies reporting IFRS financial statements. The scope covers only European listed companies operating on other than financial and insurance industry from the last twelve months. Another data base or country selection could have given different results. Moreover, the selected earnings management model strongly affects to the results. The outcome could be different if other than DeFond & Park model was used. The control variables used in this study are based on previous researches, and a different variables selection could give dissimilar results.

Further research is needed in this field, for example, to examine whether another earnings management model would give different results and better coefficient of determination for regression analysis. This study could be continued also by selecting different control variables to be used in the tests. If a new trust-level research is carried out by World Values Survey, more European countries could be included in the study.

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